Abstract of the Disclosure

Software reuse instances are found from an execution trace through a process of quantization, discovery, and synthesis. Quantization includes mapping n-dimensional vectors that correspond to instructions, live-in states, and live-out states

5   to one dimensional symbols, and arranging the symbols into a text in program execution order. Discovery includes the identification of recurrent symbols and recurrent phrases of symbols within the text. Recurrent symbols and phrases correspond to reuse instances. Compression algorithms are applied to identify the recurrent symbols and phrases. Synthesis can include correlating the reuse instances

10   with the binary program to identify the reuse regions within the software program. Synthesis can also include generating non-essential code and corresponding triggers for a conjugate processor.